

RIVAP005US

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Serial Number: 10/707,248
Filing Date: December 1, 2003
Applicant(s): Maria C. Rivara
Title: Longest-Edge Refinement and Derefinement System and Method for Automatic Mesh Generation
Group Art Unit: 2123
Examiner: Unknown

OFFICIAL**Information Disclosure**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sirs:

Attached please find a completed three (3) sheet information disclosure form for the above-referenced application, as well as copies of two (2) newly-cited non-patent references.

This application is a continuation of pending U.S. application 09/529,037, filed April 5, 2000, now abandoned. All except for the two attached references are already of record for this parent case. Furthermore, parent 09/529,037 was relied upon for an earlier filing date under 35 USC 120. Therefore, copies of these references need not be provided under 37 CFR 1.98(d).

Furthermore, a "concise explanation of relevance" under 37 CFR 1.98(a)(3) for all except the two attached references – though optional for English-language references – has already been provided in connection with parent application 09/529,037 and will be relied up here as well.

A concise explanation of relevance for the two attached references, which are newly-cited here, follows:

Castanos et al. (1999) teach a parallel distributed method for the refinement of triangulations based on previous longest-edge methods of applicant Rivara (1984a) They do not use terminal-edge based refinement.

Nave et al. (2002) teach a parallel distributed method for the global refinement of Delaunay triangulations based on concurrently inserting new mesh vertices, each one of them being a circumcenter point associated to a target element in the mesh. They do not perform parallel refinement of the mesh based on terminal-edges, nor do they perform local refinement of the mesh.

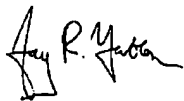
Furthermore, each of these references was published after applicant's October 8, 1997 filing date for provisional application 60/061,439, as well as after the 1998 filing dates of applicant's applications US 09/162,737 and PCT/EP98/06258, all of which are relied upon for priority here.

Please add this information disclosure to the case file for consideration by the examiner.

1 of 2

RIVAP005US

Very truly yours,



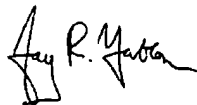
Jay R. Yablon
Registration # 30604

CERTIFICATION OF FACSIMILE TRANSMISSION UNDER 37 C.F.R. 1.8


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Substitute for form 1449B/PTO			Complete if Known		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Application Number	10/707,248	
			Filing Date	12/1/03	
			First Named Inventor	Maria C. Rivara	
			Group Art. Unit	2123	
			Examiner Name	Unknown	
Sheet	2	of	3	Attorney Docket Number	RIVAP005US

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ²	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		L. Chew, Guaranteed-quality triangular meshes, Dept. of Computer Science, Cornell University, TR 89-983, (1989).	
		N. A. Golias and T. D. Tsiboukis, An approach to refining three dimensional tetrahedral meshes based on Delaunay transformations, International Journal for Numerical Methods in Engineering, vol. 37, 793-812 (1994).	
		M. T. Jones and P. E. Plassmann, Computational results for parallel unstructured mesh computations, Computing Systems in Engineering, vol. 5, 297-309 (1994).	
		R.V. Nambiar, R.S. Valera and K.L. Lawrence, An algorithm for adaptive refinement of triangular element meshes, International Journal for Numerical Methods in Engineering, vol. 36, 499-509 (1993).	
		Ruppert, A Delaunay refinement algorithm for quality 2-dimensional mesh generation. Journal of Algorithms, vol. 18, 548-585 (1995).	
		Rebay, Efficient unstructured mesh generation by means of Delaunay triangulation and Bowyer-Watson algorithm, J. Comp. Physics, vol. 106, 125-138 (1993).	
		M. C. Rivara, Algorithms for refining triangular grids suitable for adaptive and multigrid techniques, International Journal for Numerical Methods in Engineering, vol. 20, 745-756 (1984a).	
		M. C. Rivara, Design and data structure for fully adaptive, multigrid finite element software, ACM Trans. Math. Software, vol. 10, 242-264 (1984b).	
		M. C. Rivara, A grid generator based on 4-triangles conforming mesh-refinement algorithms for triangulations, International Journal for Numerical Methods in Engineering, vol. 24, 1343-1354 (1987).	
		M. C. Rivara, Adaptive finite element refinement and fully irregular and conforming triangulations, In Accuracy Estimates and Adaptive Refinements in Finite Element Computations, I. Babuska, O.C. Zienkiewicz, J. Gago and E. R. de A. Oliveira (eds.), John Wiley & Sons, Chichester, pp. 359-370 (1986).	
		M.C. Rivara and M. Palma, New LEPP-algorithms for quality polygon and volume triangulation: implementation issues and practical behavior. In Trends in Unstructured Mesh Generation, S.A. Canana and S. Saigal (eds.) AMD - vol. 220 The American Society of Mechanical Engineers, pp. 1-8 (1997).	

Examiner Signature	Date Considered
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¹ EXAMINER: Initial if reference considered, whether or not qualifies for confirmation with MPEP-609. Draw line through citation if not in conformance and not considered. Include copy of this form via new correspondence if applicant.

² Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

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			First Named Inventor	Maria C. Rivara
			Group Art Unit	2123
			Examiner Name	Unknown
			Attorney Docket Number	RIVAP005US
Sheet	3	of	3	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner initials ¹	Cite No. ²	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		M. C. Rivara, Selective refinement/derefinement algorithms for sequences of nested triangulations, International Journal for Numerical Methods in Engineering, vol. 28, 2889-2906 (1989).	
		M. C. Rivara and C. Levin, A 3-D refinement algorithm suitable for adaptive and multigrid techniques, Communications on Applied Numerical Methods, vol. 8, 281-290 (1992).	
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		M. C. Rivara, New mathematical tools and techniques for the refinement and/or improvement of unstructured triangulations, Proceedings 5th International Meshing Roundtable, Pittsburgh, USA, October 10-11, pp 77-86 (1996).	
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		S. N. Muthukrishnan, P. S. Shiakolas, R. V. Nambiar and K. L. Lawrence, Simple algorithm for adaptive refinement of three-dimensional finite element tetrahedral meshes, AIAA Journal, Vol. 33, pp. 928-932 (1995).	
		P. L. George, F. Hecht, and E. Sahel, Fully automatic mesh generator for 3D domains of any shape, Impact of Computing in Science and Engineering, Vol. 2, pp. 187-218 (1990).	
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		B. Baccus et al., Adaptive Mesh Refinement for Multilayer Process Simulation Using the Finite Element Method, IEEE Transactions on Computer Aided Design of Integrated Circuits and Systems, vol. 11, no. 3, pages 396-403 (1992).	
		J. G. Castanos and J.E. Savage, Parallel refinement of unstructured meshes, Procs. IASTED Conference on Parallel and Distributed Computing and Systems (PDCS'99), 1999	
		D. Nave, N. Chrisochoides and L.P. Chew, Guaranteed-quality parallel Delaunay refinement for restricted polyhedral domains, Proceedings of the 8th ACM Symposium on Computational Geometry, pp 135-144, 2002	

Examiner Signature		Date Considered	
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